Amendments to the Claims:

This listing of claims as required by 37 C.F.R. 1.121 will replace all prior versions and listing of claims in the application.

- 1. (Currently Amended) An immunostimulatory oligonucleotide compound, comprising an immunostimulatory dinucleotide of formula 5'-pyrimidine-purine-3', wherein the immunostimulatory oligonucleotide compound is at least 6 nucleotides in length, and wherein pyrimidine is a non-natural pyrimidine nucleoside selected from the group consisting of 5-hydroxycytosine, 5-hydroxymethylcytosine, N4-alkylcytosine, aracytosine and 4-thiouracil and purine is a natural or non-natural purine nucleoside.
- 2. (Currently Amended) An immunostimulatory oligonucleotide compound, comprising an immunostimulatory dinucleotide of formula C*pG, wherein the immunostimulatory oligonucleotide compound is at least 6 nucleotides in length, and wherein C* is a cytidine analog selected from the group consisting of 5-hydroxycytosine, 5-hydroxymethylcytosine, N4-alkylcytosine, aracytosine and 4-thiouracil, G is guanosine, 2'-deoxyguanosine, or a guanosine analog, and p is an internucleotide linkage selected from the group consisting of phosphodiester, phosphorothioate, and phosphorodithioate.
- 3. (Currently Amended) The immunostimulatory oligonucleotide compound of claim $\underline{1} \theta$, wherein the non-natural pyrimidine nucleoside has the formula (I):

wherein D is a hydrogen bond donor, D' is selected from the group consisting of hydrogen, hydrogen bond donor, hydrogen bond acceptor, hydrophilic group, hydrophobic group, electron withdrawing group and electron donating group, A is a hydrogen bond acceptor or a hydrophilic group, X is carbon or nitrogen, and S is a pentose or hexose sugar ring, provided that the pyrimidine nucleoside of formula (*I*) is not cytidine or deoxycytidine.

- 4. (Canceled)
- 5. (Canceled)
- 6. (Currently Amended) The immunostimulatory oligonucleotide compound of claim 1 [[4]], wherein the non-naturally occurring pyrimidine base is selected from the group consisting of 5-hydroxycytosine and N4-ethylcytosine.
- 7. (Currently Amended) The immunostimulatory oligonucleotide compound of claim 1 [[4]], wherein the non-natural pyrimidine nucleoside of formula (*I*) comprises a non-naturally occurring sugar moiety.
- 8. (Currently Amended) The immunostimulatory oligonucleotide compound of claim 7, wherein the non-naturally occurring sugar moiety is arabinose and arabinose derivatives.
- 9-38. (Withdrawn)
- 39. (New) The immunostimulatory oligonucleotide compound of claim 1, wherein the non-natural pyrimidine nucleoside is 5-hydroxycytosine.
- 40. (New) The immunostimulatory oligonucleotide compound of claim 1, wherein the nonnatural pyrimidine nucleoside is 5-hydroxymethylcytosine
- 41. (New) The immunostimulatory oligonucleotide compound of claim 1, wherein the nonnatural pyrimidine nucleoside is N4-alkylcytosine

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- 42. (New) The immunostimulatory oligonucleotide compound of claim 1, wherein the non-natural pyrimidine nucleoside is aracytosine
- 43. (New) The immunostimulatory oligonucleotide compound of claim 1, wherein the non-natural pyrimidine nucleoside is 4-thiouracil